

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

ROBIN M. MILLER

Serial No.: 09/090,071

Filed: June 3, 1998

For: HEADS-UP DISPLAY WITH IMPROVED CONTRAST

Attorney Docket No.: LUTA 0177 PUS



Group Art Unit: 2774

Examiner: Kevin M. Nguyen

#10  
12-1800

**APPEAL BRIEF UNDER 37 C.F.R. § 1.192**

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Sir:

This is a brief in support of an appeal for the final rejection of claims 5 - 9, 12, 13, and 16 in the Office Action mailed on June 6, 2000, now claims 5-9, 12, 13, 16 and 17 in view of an Advisory Action mailed September 11, 2000.

**I. REAL PARTY IN INTEREST**

The real party in interest is Lear Automotive Dearborn, Inc., a corporation organized and existing under the laws of the state of Delaware, and having a place of business at Southfield, Michigan, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on July 9, 1999 at Reel 010061, Frame 0393.

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Frederick M. Ritchie  
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## **II. RELATED APPEALS AND INTERFERENCES**

There are no appeals or interferences known to applicant or applicant's legal representative or the Assignee which will directly affect or be directly effected by or having a bearing on the boards decision in this appeal.

## **III. STATUS OF CLAIMS**

Claims 5-9, 12, 13, 16, and 17 are pending in this application, (reproduced for reference in the attached Appendix) and are finally rejected and on appeal.

## **IV. STATUS OF AMENDMENTS**

An amendment to claims 5, 9, 12, and 13 and the addition of claim 17 under 37 C.F.R. § 1.116 was filed subsequent to the final rejection. The Examiner indicated in the Advisory Action mailed September 11, 2000, that the proposed amendments would be entered upon the filing of a Notice of Appeal and an Appeal Brief. Accordingly, the amendments and claim 17 are included in the attached APPENDIX. Additionally, and in order to expedite the prosecution of this application, Applicant hereby authorizes the Examiner to cancel, without prejudice, claims 9, 13, 16 and 17 by Examiner's Amendment.

## **V. SUMMARY OF THE INVENTION**

Applicant's invention controls the contrast of a vehicle heads-up display (HUD) to an environmental image in response to a signal developed of the environmental image approaching the moving vehicle. In some situations, there are environmental factors that affect the visibility or clarity of the image displayed. For example, as illustrated in the drawings, the visibility of the image displayed on the interior surface of the windshield may be affected, for instance, by environmental images produced by a gravel road 34 (Figure 3A) or elongated

crops (Figure 3B), or by an approaching vehicle such as a large red truck 37 (Figure 2B). (*Specification*, page 2, lines 1-18.)

Applicant's claims include limitations for controlling the contrast of the heads-up display in response to the environmental image approaching the moving vehicle.

## **VI. ISSUES**

A. The Examiner has finally rejected claims 5 - 9, 12, 13, 16 and 17 under 35 U.S.C. § 102(b) as being anticipated by Roberts (U.S. Patent No. 5,005,009, hereinafter "*Roberts*"). Accordingly, the sole issue to be considered on appeal is whether claims 5 - 9, 12, 13, 16 and 17 are anticipated under 35 U.S.C. § 102(b) by *Roberts*.

B. If the Examiner acts on Applicant's authorization to cancel claims 9, 13, 16 and 17, the sole issue to be considered on appeal is whether claims 5-8 and 12 are anticipated under 35 U.S.C. § 102(b) by *Roberts*.

## **VII. GROUPING OF CLAIMS**

System claims 5-8 and method claim 12 stand together.

System claims 9, 16 and 17 and method claim 13 stand together.

## **VIII. ARGUMENT**

### **A. Summary of the Examiner's Rejection**

In the Advisory Action, the Examiner states that the application is not in condition for allowance for the reasons cited in the Final Office Action, dated June 2, 2000.

Additionally, the Examiner asserts that “*Roberts* is relied upon for teaching the steps of controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle which includes a camera to capture the image, and arranging the heads-up display to be in contrast to an environmental image approaching the vehicle by surface treating a portion of the windshield and directing light onto the surface treated portion to provide a back glow, whereby, the heads-up display is directed onto the back glow.” (*Advisory Action*, page 2.)

***B.     Concise Statement Of Applicant’s Arguments***

With respect to claim 5 and with reference to Figures 1, 2A and 2B, Applicant claims a vehicle heads-up display system comprising a source 25 for providing a heads-up display 28 onto a windshield 22 of a moving vehicle 20. The system includes an arrangement for controlling the contrast of the heads-up display 28 to an environmental image 30 approaching the moving vehicle 20. The arrangement includes an optical detector 32 for capturing the image of the environment 30 approaching the vehicle 20, so that a control 33 coupled to the optical detector 32 may control the contrast of the heads-up display 28 in response to the environmental image 30 approaching the moving vehicle 20.

In regard to claim 5 (and claims 6-8 which depend therefrom), Applicant respectfully contends *Roberts* does not teach and thus cannot anticipate “an arrangement for controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle wherein the arrangement includes an optical detector for capturing the image of the environment approaching the vehicle” because the *Roberts* “camera, video recorder, television camera, etc.” which the Examiner cites for the claim 5 “optical detector” in his final Action do not include or suggest “a control coupled to the optical detector for controlling the contrast of the heads-up display in response to the environmental image approaching the moving vehicle.”

With respect to claim 12 and with reference to Figures 1, 2A and 2B, Applicant teaches a method of providing a heads-up display by providing a system for directing a heads-up display 28 onto the windshield 22 of a moving vehicle 20. The method includes controlling the contrast of the heads-up display 28 to an environmental image 30 approaching the moving vehicle. Controlling the contrast of the heads-up display 28 includes capturing the image of the environment 30 approaching the moving vehicle 20. Then, controlling the contrast of the heads-up display 28 in response to the environmental image 30 captured.

In regard to claim 12, Applicant respectfully contends *Roberts* does not teach and cannot anticipate a method step which calls for “controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle” wherein the “step of controlling includes the step of capturing the image of the environment approaching the moving vehicle and controlling the contrast of the heads-up display in response to the environmental image captured.”

**C. Teachings of Roberts**

*Roberts* discloses an instrument display apparatus which produces a reflected image of an instrument onto a windscreen that an operator may view while viewing out through the windscreen. (Col. 1, ll. 10 - 15.) More particularly, *Roberts* discloses a film, coating or emulsion forming a predetermined tint field that is placed within the surface or structure of a windshield or windscreen in such a manner and a position such that data in the form of visual indicia to be noted by the operator of the vehicle can be exhibited directly on the innermost surface of the windscreen. (Cols. 2 - 3, ll. 61 - 1. 3.) The instrument display or cluster which is indicated by the numeral 14 in Figure 1 may be artificially illuminated by any back light, side or front light 13 which operates to augment, supplement or enhance the reflective ambient light 18. (Col. 5, ll. 9 - 13.) The intensity of the artificial lighting may be selectively controlled by a manually adjustable rheostat or potentiometer and/or automatically by a photosensor, which can detect ambient light lighting conditions and thereafter increase or

decrease the intensity of the artificial lighting 13 if the ambient lighting conditions warrant. (Col. 5, ll. 17 - 25.) This ambient lighting intensity determines artificial light required to be supplied by the artificial lighting 13 to produce a readable primary reflected image in the enhanced film or predetermined tint field 12. (Col. 6, ll. 20 - 25.)

Simply stated, Roberts discloses a heads-up display located on a tinted windshield. The heads-up display is produced by illuminating an indicator such that only light projecting through the indicator is transmitted to the tinted windshield.

***D. Errors in the Examiner's Rejections and Why Claims  
5-8 and 12 are Patentable Under 35 U.S.C. § 102***

To particularly point out the Examiner's errors in rejecting Applicant's claims, Applicant has reproduced the Examiner's arguments, as asserted in the Final Office Action dated June 2, 2000, whereby the Examiner rejects claims 5-8 and 12 under § 102(b) as follows:

In paragraph 5 of the Final Office Action:

As to claims 5-9, 12, 13, and 16, Roberts teaches lights 13 at predetermined positions relative to the windshield 10 (see figure 1, column 5, lines 25-38), the primary reflected image being enhanced by greatly improving the contrast relative to the background lighting conditions (column 4, lines 48-53). Ambient light 18 passes through the windscreen 10 and directly illuminates the instrument indicators 14 as well as the observer 11 (figure 1, column 6, line 20). The small tint field 12, which controls increase and modifies the contrast, may be smaller than the total area of the windscreen 10 (figure 3, column 5, lines 51-54). Accordingly, lights 13 corresponds to a source as claimed.

Roberts teaches any remotely controlled device for recording and/or transmitting visual information, such as camera, video recorder, a television camera, etc., not shown, can be remotely located in the position of the operator 11 as illustrated in figure 1 (column 6, lines 8-15).

Roberts teaches lights 13 are placed in front of or behind the instrument display 14 (column 5, lines 8-25).

In paragraph 7 of the Final Office Action, regarding claim 5:

. . . Roberts' invention teaches the transmitting visual information, such as a camera was controlled by any remotely controlled device. . . . [A] camera was taught by Roberts to capture the image of the environment approaching the vehicle.

Regarding the Final Office Action paragraph 5 citation and paragraph 7 citation directed to claim 5, Applicant contends the conclusions reached are inaccurate and therefore in error. The citation is inaccurate because, as indicated above in the *Teachings of Roberts*, *Roberts* clearly does not teach capturing an image of the environment approaching the moving vehicle and controlling contrast in response to the image. Applicant believes that the reference asserted by the Examiner must be read in its entirety, where one would then clearly understand *Roberts* ignores the environmental character of the approaching image and merely teaches substituting a camera for the eyes of a vehicle operator, such that the camera may be used to view the heads up display located on the windshield and the environment beyond. This paragraph from which the Examiner cites is provided in its entirety as follows:

Although I have illustrated a human being 11 as the observer or operator of the vehicle which includes the present invention, and who employs his own vision as the detector of the visual display produced by the invention, on the windscreen, it is to be understood that any remotely controlled device for recording and/or transmitting visual information, such as a camera, video recorder, a television camera, *etc.*, not shown, can be remotely located in the position of the operator 11 as illustrated in FIG. 1. This may be particularly critical for the operation of devices such as a drone aircraft or other overland vehicles which have no human operators but which are remotely controlled.

(Col. 6, ll. 3 - 15. Underlining added.)

With the above emphasis, Applicant believes that the Examiner's citations do not teach controlling contrast of the heads-up display "in response to the environmental image

captured” (claim 12) or “in response to the environmental image approaching the moving vehicle” (claims 5-8). Applicant captures an “image” and controls in response to the image whereas *Roberts*, as indicated above in the *Teachings of Roberts*, merely responds to the ambient light 18 of the sun, not the “image” of the tree 19.

Therefore, Applicant’s claims 5-8 and 12 are believed to be allowable for the reason that the Examiner erred in construing *Roberts*.

***E.    Specific Limitations in the Rejected Claims  
Which Are Not Described in the Prior Art***

In regard to claims 5-8, Applicant respectfully contends *Roberts* lacks the problem of “an arrangement for controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle” and, without the problem, he has no need for, nor does he suggest “an optical detector for capturing the image of the environment approaching the vehicle” in combination with “a control coupled to the optical detector for controlling the contrast of the heads-up display in response to the environmental image approaching the moving vehicle.”

Likewise, in regard to claim 12, Applicant respectfully contends *Roberts* does not teach “controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle” wherein the step of controlling includes the step of “capturing the image of the environment approaching the moving vehicle and controlling the contrast of the heads-up display in response to the environmental image captured.”



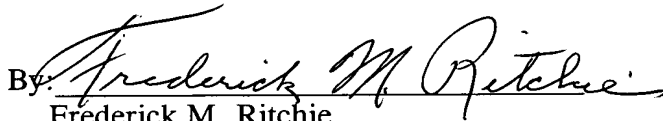
**IX. CONCLUSION**

Applicant urges the Board of Patent Appeals and Interferences to find that claims 5-8 and 12 are not anticipated by the teachings of *Roberts*, and are allowable.

The fee of \$310.00 as applicable under the provisions of 37 C.F.R. § 1.17(c) is enclosed. Please charge any additional fee or credit any overpayment in connection with this filing to our Deposit Account No. 02-3978.

Respectfully submitted,

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Enclosure - Appendix



**X. APPENDIX - CLAIMS ON APPEAL**

5. A vehicle heads-up display system comprising:  
a source for providing a heads-up display onto a windshield of a moving vehicle;

and

an arrangement for controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle wherein the arrangement includes an optical detector for capturing the image of the environment approaching the vehicle and a control coupled to the optical detector for controlling the contrast of the heads-up display in response to the environmental image approaching the moving vehicle.

6. A heads-up display as recited in Claim 5, wherein the control selects an appropriate heads-up display dependent upon said captured image.

7. A heads-up display as recited in Claim 6, wherein the control selects an appropriate pattern for the heads-up display dependent upon said captured image.

8. A heads-up display as recited in Claim 6, wherein the control selects an appropriate color for the heads-up display dependent upon said captured image.

9. A vehicle heads-up display system comprising:  
a source for providing a heads-up display onto a windshield of a moving vehicle;

and

an arrangement for controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle wherein an area on the windshield is provided with a surface treatment, and wherein the system further comprises a light source adjacent the surface treated area for directing a light onto the surface treated area to provide a glow and said heads-up display being directed onto said surface treated area.

12. A method of providing a heads-up display comprising the steps of:

- (a) providing a system for directing a heads-up display onto the windshield of a moving vehicle;
- (b) directing a heads-up display onto the vehicle windshield; and
- (c) controlling the contrast of the heads-up display to an environmental image approaching the moving vehicle wherein the step of controlling includes the step of capturing the image of the environment approaching the moving vehicle and controlling the contrast of the heads-up display in response to the environmental image captured.

13. A method of providing a heads-up display comprising the steps of:

- (a) providing a system for directing a heads-up display onto the vehicle windshield;
- (b) directing a heads-up display onto the windshield of a moving vehicle; and
- (c) arranging the heads-up display to be in contrast to an environmental image approaching the vehicle by surface treating a portion of the windshield and directing light onto the surface treated portion to provide a back glow, whereby the heads-up display is directed onto the back glow.

16. A heads-up display system for a vehicle comprising:

- a windshield;
- a heads-up display source; and
- said windshield having a small portion provided with a surface to contrast, said heads-up display source directing a heads-up display at said small portion wherein the system further comprises a light source adjacent said small portion to provide a back glow at a roughened area on said windshield.

17. The vehicle heads-up display system of claim 9, wherein the surface treated area further includes a roughened portion of the windshield.